UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

Note to Reader
January 15, 1998

Background: As part of its effort to involve the public in the implementation of the Food Quality Protection Act of 1996 (FQPA), which is designed to ensure that the United States continues to have the safest and most abundant food supply. EPA is undertaking an effort to open public dockets on the organophosphate pesticides. These dockets will make available to all interested parties documents that were developed as part of the U.S. Environmental Protection Agency's process for making reregistration eligibility decisions and tolerance reassessments consistent with FQPA. The dockets include preliminary health assessments and, where available, ecological risk assessments conducted by EPA, rebuttals or corrections to the risk assessments submitted by chemical registrants, and the Agency's response to the registrants' submissions.

The analyses contained in this docket are preliminary in nature and represent the information available to EPA at the time they were prepared. Additional information may have been submitted to EPA which has not yet been incorporated into these analyses, and registrants or others may be developing relevant information. It's common and appropriate that new information and analyses will be used to revise and refine the evaluations contained in these dockets to make them more comprehensive and realistic. The Agency cautions against premature conclusions based on these preliminary assessments and against any use of information contained in these documents out of their full context. Throughout this process, If unacceptable risks are identified, EPA will act to reduce or eliminate the risks.

There is a 60 day comment period in which the public and all interested parties are invited to submit comments on the information in this docket. Comments should directly relate to this organophosphate and to the information and issues available in the information docket. Once the comment period closes, EPA will review all comments and revise the risk assessments, as necessary.

These preliminary risk assessments represent an early stage in the process by which EPA is evaluating the regulatory requirements applicable to existing pesticides. Through this opportunity for notice and comment, the Agency hopes to advance the openness and scientific soundness underpinning its decisions. This process is designed to assure that America continues to enjoy the safest and most abundant food supply. Through implementation of EPA's tolerance reassessment program under the Food Quality Protection Act, the food supply will become even safer. Leading health experts recommend that all people eat a wide variety of foods, including at least five servings of fruits and vegetables a day.

Note: This sheet is provided to help the reader understand how refined and developed the pesticide file is as of the date prepared, what if any changes have occurred recently, and what new information, if any, is expected to be included in the analysis before decisions are made. **It is not meant to be a summary of all current information regarding the chemical.** Rather, the sheet provides some context to better understand the substantive material in the docket (RED chapters, registrant rebuttals, Agency responses to rebuttals, etc.) for this pesticide.

Further, in some cases, differences may be noted between the RED chapters and the Agency's comprehensive reports on the hazard identification information and safety factors for all organophosphates. In these cases, information in the comprehensive reports is the most current and will, barring the submission of more data that the Agency finds useful, be used in the risk assessments.

Jack E. Housenger, Acting Director
Special Review and Reregistration Division

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DRINKING WATER ASSESSMENT

SUBJECT: Methidathion - Tier 3 Drinking Water Assessment
PC Code: 100301

TO: Robert Travaglini, Chemist
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FROM: James C. Lin, Environmental Engineer
Environmental Risk Branch III
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THRU: Daniel Rieder
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DATE: December 30, 1998

This tier III drinking water assessment was performed at the request of HED based on their risk assessment. According to HED's chapter -

> "With the exception of children 1-6 years, these DWLOCs do not indicate a risk concern from exposure to methidathion residues in drinking water. In accordance with OPP's Interim Approach for Addressing Drinking Water Exposure (S. Johnson, 11/17/97), EFED should conduct a detailed review and analysis of all available monitoring data for Methidathion, and determine if they are reliable and appropriate to use for an assessment of the pesticide's impacts on drinking water (tier 3 analysis)."

This memo provides estimates of surface and ground water drinking water concentrations for methidathion based on the monitoring data collected in the State of California, which has more than 90-95% of methidathion uses and also includes results of additional tier II modeling.

Drinking Water Monitoring Evaluated

The monitoring analysis effort started with EPA's STORET database. The methidathion summaries of STORET are presented in Table 1. In the follow-up with the contact - S. Lowell of California Environmental Protection Agency (916) 657-1830. She suggested that do not use this data due to the two possible reported problems: (1) no detection limit, and (2) all residue values were reported in whole number. At her recommendation, EFED contacted D. Storm (916) 324-2319 of the Drinking Water Field Operational Branch, Department of Health Services, State of California. D. Storm provided EFED results of their drinking water monitoring for methidathion. The monitoring results of Department of Health Services, California Public Drinking Water Sources were summarized in Table 2. Their methidathion database includes results of analysis of a total of 264 samples of drinking water with 259 representing drinking water from groundwater sources and 5 representing surface water sources. Most of the samples were collected in 1986. The most recent sampling year was 1992 and only one sample was collected and analyzed. The results indicate that no positive detections. The levels of detection ranged from 0.5 ppb to 10 ppb, with most samples having levels of detection between 1 ppb (~43) and 5 ppb (~173). Based on analysis of the database, only 5 samples had levels of detection of 10 ppb.

The limited available drinking water monitoring results suggest that methidathion may bot be a concern as there are no confirmed detections for the drinking water sources and most levels of detection are 5 ppb or lower.

River Water Monitoring

The EFED also obtained results of monitoring from San Joaquin River. Out of 25 samples, methidathion was detected in 11. Concentrations ranged from less than 1 ppb to about 15 ppb, with an average of less than 3 ppb.

New Modeling

In addition, EFED re-ran PRZM-EXAMS for citrus and cotton in California. In the previous modeling, the citrus scenario was from Florida, and the cotton scenario was from Mississippi. The new modeling from California, where 90-95% of methidathion is used, results in the following EECs:

Cotton: 2 applications at 0.5 lb ai/ac	peak EEC (ppb)	90-day EEC (ppb)	annual average EEC (ppb)
assuming no foliar degradation	2.7	1.1	0.4
assuming a foliar half-life of 2.8 days	2.5	0.8	0.2
Citrus: 1 application at 2 lb ai/ac			
assuming no foliar degradation	5.6	2.1	0.6
assuming a foliar half-life of 2.8 days	5.6	1.6	0.4

The new modeling, using appropriate meteorological conditions where approximately 90-95% of methidathion is used (California), also suggests concentrations in surface water may be lower than previous modeled EECs suggested.

Conclusion

The EFED concluded that peak concentrations in surface water are not likely to exceed 15 ppb. Chronic concentrations in surface water are expected to be significantly lower; i.e., < 1 ppb. However, based on monitoring of drinking water, there is no evidence that these raw water levels continue through processing of surface water. Monitoring suggests drinking water concentrations of methidathion will not exceed 5 ppb.

There is uncertainty because of the small number of monitoring samples, and also because there is no way to link the drinking water supply monitoring that resulted in zero detections to measured levels in raw surface water. So the fact that there were no detections in the drinking water might be the results of methidathion being removed during treatment or because there was no methidathion in the surface water to begin with.

Table 1. STORET Summaries of Methidathion

Chemical: Methidathion

STORET monitoring results

sample type	wells	
total sample number	274	
sampling periods	1984	3 samples
	1985	50 samples
	1986	140 samples
	1987	81 samples
sampling state	(06) California	
sampling counties	(029) Kern	125 samples
	(031) Kings	18 samples
	(037) Los Angeles	68 samples
	(047) Merced	26 samples
	(053) Monterey	5 samples
	(065) Riverside	27 samples
	(073) San Diego	5 samples

residue values (reported in whole number)

5 @ 10 ug/L
223 @ 5 ug/L
2 @ 2 ug/L
44 @ 1 ug/L

Contact: Suzanne Lowell, CA (916)657-1830

Table 2. Monitoring Results of California Public Drinking Water Sources

Sampling by year

year	number of samples
1984	3
1985	49
1986	122
1987	81
1988	1
1989	5
1992	1
1994	2

Sampling by sources

total sampled	**264**
ground water sources	259
surface water sources	5

Results - NO DETECTION.

Contact: David Storm at Drinking Water Field Operational Branch, Department of Health Services, State of California, (916) 324-2319